



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,173	12/21/2001	James Michael Larson	57411US002	2831
32692	7590	07/26/2004	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			PARKER, FREDERICK JOHN	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 07/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/028,173	LARSON, JAMES MICHAEL	
	Examiner	Art Unit	
	Frederick J. Parker	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 6-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1-5 in the reply filed on 6/14/04 is acknowledged. The traversal is on the ground(s) that (1) the two groups of claims are so interrelated that the search of one will reveal the other invention, (2) plural searches represent additional work for the USPTO, and (3) the payment of separate filing fees and other costs for plural applications places undue financial burden on the applicant. This is not found persuasive because (1) the searches of a method and membrane assembly are hardly interrelated, the assembly requiring a far more extensive scope than a method of making a diffusion layer. The issues arising from examining the assembly would place an undue burden on the Examiner not simply because of excessive search, but because of patentability issues arising from its prosecution which would be unfamiliar and burdensome to the Examiner; (2) while the Examiner appreciates Applicants' concern for the additional work for the PTO by plural searches, the Examiner is simply following the MPEP in properly restricting separate and distinct inventions, and (3) while the Examiner sympathizes with the extra fees to be incurred by filing separately for the two inventions, this is simply following the governs of the USPTO, over which the Examiner has no control. The requirement is still deemed proper and is therefore made FINAL.

Specification

2. The disclosure is objected to because of the following informalities: page 4, line 23, the serial/ patent number was not inserted. Appropriate correction is required.

Art Unit: 1762

3. The use of trademarks have been noted throughout this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

See pages 2, para.2; pages 4 &6; page 7, lines 9,10,14; and Examples.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al US 4293396 in view of Fan et al US 2002/0134501.

Allen et al teaches forming a gas diffusion layer for fuel cells, in which woven cloth fabrics, including PANEX (which Applicants cite in specification page 4, 9 as a plain weave carbon

Art Unit: 1762

cloth), to which is applied a suspension of carbon and TEFLON (TFE, a highly fluorinated polymer per Specification page 6) so that the mixture penetrates at least a portion of the cloth thickness, followed by drying (col. 5, 8-28) to form a coated plain-weave carbon cloth. There is no attachment of the cloth to another layer in the Allen reference. Subsequent compression is not cited.

Fan et al also teaches forming gas diffusion barriers for fuel cells in which a slurry of carbon, TFE, and a liquid vehicle are applied to a carbon cloth substrate, dried, and then "rolled to substantially eliminate cracks" in the coating. While the amount of compression of the coated cloth is not cited, it would have been apparent to one of ordinary skill to adjust pressure for a given cloth and coating to eliminate cracks while not disturbing/ deforming the coating or cloth. The goal of the roller compression is cited to be to eliminate cracks, which one skilled in the art would have recognized would prevent leakage/ electrical shorting or break-down in fuel cells, as well as providing the added advantage of improving adherence of the TFE-carbon layer with the cloth. Thus, it is the Examiner's position that, given the identical use and outcomes of Applicant's claims and the prior art, the compression values represent optimization by routine experimentation of known process parameters clearly disclosed by the prior art, and would not appear to patentably distinguish over the prior art.

As to article claims 4-5, it is the Examiner's position that the product by process claims would have been obvious in view of the fact that the process of making would have been obvious in view of the cited prior art. There is simply no structure or evidence to support the patentability of the product claims over the cited prior art.

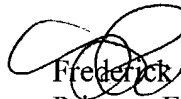
Art Unit: 1762

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Allen et al by applying compression as taught by Fan et al to provide the motivating benefits of improving coating-cloth adherence and substantially eliminating cracks which would have been detrimental to the performance of the fuel cells in which the gas diffusion barrier products are used.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am -3:45pm, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 571/272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Frederick J. Parker
Primary Examiner
Art Unit 1762

fjp